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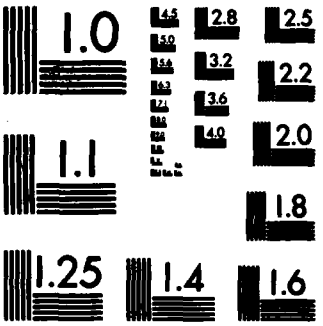

FUTURE DIRECTIONS FOR ANALYSIS OF THE SOVIET ECONOMY

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December 1984

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Yesterday we had an abundance of charts and today none. I am going to remedy that disproportion slightly.

CHART 1

OBSERVATIONS ON FUTURE DIRECTIONS FOR ANALYSIS OF SOVIET ECONOMY

- PREMISE: CONSIDERATION OF FUTURE DIRECTIONS SHOULD START WITH CONSIDERATION OF SYSTEM'S POLITICAL AND SOCIAL CHARACTERISTICS
- WHY? THESE CHARACTERISTICS MAY SUGGEST WHAT'S MISSED OR OBSCURED IN CONVENTIONAL ECONOMIC ANALYSES
- NOTE: ABOVE INVERTS STANDARD MARXIAN ANALYTICAL PRECEPT

I want to start with a premise that, among most economists, might be considered heresy. But perhaps it's not quite as heretical as it might have been before Harry Rowen's remarks. The premise is that, in thinking about our future directions of research in the analysis of the Soviet economy, we should start by considering the political and social characteristics of the Soviet system. This is a switch from a comment that Jim Steiner made yesterday that economic modeling can provide a structure for political analysis. Political and social analysis can help in providing some guidance for economic modeling.

I want to suggest that we think about the directions of economic analysis in modeling by stepping back and first considering what makes the system go. Why should we do this? I think the answer is that these antecedent political and social characteristics may guide us to what we otherwise might miss or obscure in analyzing the economy of the Soviet Union and of Soviet-type systems.

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*Given at a conference on Soviet economic modeling sponsored by the Rand Corporation in Washington, D.C., October 11-12, 1984.

It's worth noting, at least in passing, that what I'm proposing really inverts the standard Marxian analytical precept: namely, that the economic conditions of production determine the political and social characteristics of the system. Instead, what I'm suggesting is that the political and social characteristics determine the economic conditions of production.

What then are some of these characteristics?

CHART 2

CHARACTERISTICS OF SOVIET SYSTEM

- TOTALITARIAN STATE -- PERVASIVE AND CENTRALIZED POLITICAL/SOCIAL CONTROL
- GOVERNANCE BY SELF-PERPETUATING POLITICAL/MILITARY ELITE
- MILITARY/SECURITY PRIORITIES DOMINATE CIVIL ONES
  - -- CONCERN FOR SOME, BUT MODEST, IMPROVEMENT IN CIVIL CONSUMPTION
- PERSISTENT CULTIVATION OF EXTERNAL/INTERNAL THREATS, AND REQUIREMENT FOR INTERNATIONAL "STRUGGLE"
  - -- IMPORTANCE OF EXTERNAL EMPIRE: MAINTENANCE ("FRATERNAL STATES") AND EXTENSION
- PREFERENCE FOR AUTARCHY (SELF-RELIANCE)

I have listed on Chart 2 what I think are the salient characteristics of the Soviet system. Whether or not you concur precisely in all of these five conditions, I want to urge that consideration of how to model the Soviet economy should start with an agreement on what the principal political and social characteristics of the system are. This list summarizes what seems to me to be the dominant ones. They are self-explanatory. There may be a slight difference between what the chart indicates about nonmilitary consumption and Harry Rowen's earlier remarks on this subject. Whether some modest increase in per capita

consumption growth is preferable to none can be formally handled in the constraints that are specified in an economic model. The point is that austerity--limited growth in consumption, or no growth--is a virtue. Austerity is something the system wants to cultivate. That's a corollary of the system characteristic that military priorities dominate civil ones. While there is a concern for civil consumption, it's very modest.

Another essential point is that the system is mobilized and energized by a sustained cultivation of both an internal and external threat, as well as a ritualized exhortation toward vigilance and international struggle. A colleague of mine, Nathan Leites, has just finished a monograph on Soviet style in peacetime management of predominantly nonmilitary enterprises. He stresses the same theme in Soviet indoctrination of civil managers, exhorting them to struggle and to overcome ubiquitous internal as well as external threats. In that connection, a point that has not come up in the last day and a half of our discussion is that the maintainance and expansion of the Soviet empire are important elements among the political and social characteristics of the system and what sustains it.

Now, that leads to specification of the Soviet system's main objective, in a manner that is very similar to Harry Rowen's remarks, though we have arrived at this formulation independently.

CHART 3

SYSTEM OBJECTIVE: A SUGGESTED CHARACTERIZATION

- MAXIMIZE INTERNAL/EXTERNAL MILITARY AND POLITICAL POWER SUBJECT TO CONSTRAINTS ON CIVIL CONSUMPTION (RATHER THAN VICE VERSA)
- CAN BE VIEWED AS SIXTH CHARACTERISTIC OF SYSTEM, OR AS RESULTANT OR DETERMINANT OF OTHER FIVE
- SOVIET SYSTEM IS A MILITARY-INDUSTRIAL COMPLEX, RATHER THAN HAVING ONE (AS IN U.S.)
- SOVIET ECONOMY AS A "WAR-ECONOMY"

Chart 3 suggests that this objective is to maximize military and political power subject to constraints on civil consumption. Mike Kennedy and George Pugh and Mark Hopkins will correctly observe that, depending on how high you specify the constraints on civil consumption, this can be transformed logically into the reverse specification: maximizing civil consumption, subject to a constraint on military capabilities. Nevertheless, I think it is more appropriate and revealing to specify the primary objective as the maximization of military and political power, with only passing recognition of civil consumption as a constraint, rather than the other way around. This formulation affects the way you think about the Soviet economy, and the kinds of data you collect and the way you go about analyzing and modeling the economy.

This formulation of the system's principal objective can be viewed as a sixth characteristic of the system, or it can be viewed as a resultant, or as a determinant of the other five.

Another way of conveying this same point, is to observe that the Soviet Union *is* a military-industrial complex, by contrast with the U.S. which *has* a military-industrial complex.

Still another way of making the same point is that the Soviet economy should be viewed as a sustained wartime economy, even in peacetime.

Now, what are the implications from that standpoint, with respect to the future direction of economic analysis of the Soviet Union?

CHART 4

SOME IMPLICATIONS FOR ECONOMIC ANALYSIS: (AGENDA FOR FUTURE DIRECTIONS)

A. QUALITY DIFFERENCES IN INPUTS/OUTPUTS

- PREFERENTIAL ACCESS BY MILITARY TO BEST QUALITY FACTOR INPUTS (OFER'S STUDY OF MR&D)
- PREFERENTIAL CHOICE AMONG OUTPUTS WITHOUT PRICE PENALTY: QUALITY AND SPEED OF DELIVERY

I have divided these implications into three categories. The first category shown in Chart 4 is familiar to you, but I think it relates to something that should be highlighted rather than submerged in modeling the Soviet economy. There are fundamental differences in the quality of inputs and outputs and intermediate products that the military sectors utilize. There is preferential access by the military to the highest quality factor inputs. One example is reflected in a Rand study by Gur Ofer in 1980 of Soviet military research and development, and the preferential access it enjoys to higher quality inputs. The military also receives preferential choice among outputs without corresponding price penalties. This point is implicit in Richard Ericson's earlier comment about the reasons for subdividing each Soviet industrial sector into a military part and a nonmilitary part, with the former having preferential access to inputs and outputs. These preferences have both a quality and a time dimension attached to them.

A second implication is to emphasize "quasi-military," rather than "purely military" expenditures, in considering the real burden imposed by the militarized character of Soviet society on the economy.

CHART 5

IMPLICATIONS (CONT'D)

B. QUASI-MILITARY (VS. "PURELY MILITARY") EXPENDITURES

- SITING AND CONSTRUCTION OF INDUSTRY: HINTERLAND SITING (E.G. URAL-KUZNETSK BASIN), DISPERSAL (ADDED TRANSPORT COSTS), UNDERGROUND AND HARDENED CONSTRUCTION
- SUBORDINATING DESIGN, CONSTRUCTION, AND PRODUCTION OF GOODS AND INFRASTRUCTURE TO MILITARY AIMS (E.G. TRANSPORT FACILITIES, METAL PROCESSING, SCHOOLS, ROADS TO AFGHAN BORDER IN 1970S, ETC.)
- EMPIRE'S PRIORITY CLAIM ON RESOURCES COMPETES WITH MILITARY CLAIMS, AND PROBABLY DOMINATES CIVIL CLAIMS. ACTUAL EMPIRE COSTS DEPEND ON MARGINAL COSTS OF MAINTENANCE AND ACQUISITION

The category shown in Chart 5 relates to the point that Harry Rowen referred to about a broader definition of security, and of military-related sectors and outputs. The chart lists some examples of what I mean by quasi-military expenditures: the siting and construction of industry; locating industrial plants in the hinterland and dispersal of industrial capacity, which of course adds to transportation costs and is one reason why transport is a typical bottleneck in Soviet-type economies. (There is a similarity here between the Soviet economy and the economy of another communist country, North Korea. In some respects, North Korea is an intensified version of the Soviet economy. As one example, underground and hardened industrial construction are pervasive in North Korea, and they also occur in the Soviet Union.) Another example of such quasi-military costs is the subordination of the design, construction, and production of goods and of infrastructure to military purposes. Chart 5 shows some other examples of quasi-military expenditures of this sort.

Finally, there is a priority claim exercised by the empire that competes for resources with direct military claims, and probably dominates claims exercised by nonmilitary civil consumption.

The last point on the chart is really a parenthetical remark, and a hypothesis. The empire's marginal costs are the sum of the marginal cost of maintaining the Soviet empire, plus the marginal costs of acquisition or expansion of the imperial enterprise.

The third implication shown in Chart 6 relates to several technical issues.

CHART 6

IMPLICATIONS (CONT'D)

C. TECHNICAL ISSUES

- PRODUCTION FUNCTIONS FOR MILITARY SECTORS (E.G. MBMW) SHOULD HAVE LOWER CAPITAL AND LABOR COEFFICIENTS THAN NON-MILITARY SECTORS (IF K AND L ARE (ERRONEOUSLY) ASSUMED HOMOGENEOUS IN ALL SECTORS)
- IF K AND L RELEASED FROM CIVIL TO MILITARY SECTOR, SMALLER EFFECTS ON MILITARY OUTPUT THAN EQUIVALENT K AND L ALREADY IN MILITARY SECTOR (DUE TO QUALITY DIFFERENCES IN INPUTS, NOT STANDARD DIMINISHING RETURNS)
- EMPIRE COST CALCULATIONS SHOULD INCLUDE DEADWEIGHT LOSSES (OPPORTUNITY COSTS) OF IMPLICIT TRADE SUBSIDIES

The first two points in the chart are really different ways of formulating the same idea. Production functions for military sectors, such as MB&W and other militarily more directly related sectors, should have lower capital and labor coefficients than nonmilitary sectors, because the inputs are of higher quality and are more productive. Similarly, if capital and labor are assumed to be homogeneous in all sectors, then the capital-labor coefficients should be higher in the civil than in military sectors.

An inference from the foregoing is that, if capital and labor are released from the civil sectors to the military sectors, there will be smaller incremental effects on military output than the effects of equivalent amounts of capital and labor that are already in the military sectors. The reason is that the capital and labor already in the military sector will generally be higher in quality than the capital and labor that is released from prior civil uses. In other words, this is a source of diminished marginal factor productivity separate from the standard diminishing returns explanation.

The third technical issue on the chart is really not commensurable with the others. It's in a somewhat different domain. In calculating empire costs, I suggest that we should include the opportunity costs that are involved in implicit trade subsidies where prices are charged or paid by the Soviets that are different from world market prices.

The final chart summarizes the main points I've covered.

CHART 7

CONCLUSIONS

- POLITICAL/SOCIAL CHARACTERISTICS OF SYSTEM HAVE PERVASIVE (AND NEGLECTED) EFFECTS ON RELATIONS BETWEEN MILITARY/SECURITY AND SOVIET ECONOMY
- THESE RELATIONS SUGGEST AGENDA FOR FUTURE RESEARCH:
  - -- QUALITY DIFFERENCES IN INPUTS AND OUTPUTS
  - -- QUASI-MILITARY TYPES OF EXPENDITURE
  - -- SECTORAL PRODUCTION FUNCTIONS
  - -- EMPIRE COSTS

The political and social characteristics of the Soviet system ought to be the starting point for considering the future directions of modeling and analysis of the Soviet economy, because these characteristics have a pervasive and neglected effect on the relationships between the Soviet economy and the Soviet military and security objectives broadly construed. In turn, these relationships suggest an agenda for future research along the lines shown on the chart.

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